

In the Claims:

1. (currently amended) A method for removing rosin flux residue formed on from electronic assembly surfaces, interfaces and under device surfaces during high temperature solder interconnections which comprise the steps of:

(a) providing a first cleaning composition which comprises a first water insoluble hydrophobic solvent with a surface active agent, wherein said hydrophobic solvent are propylene glycol alkylethers represented by the formula $RO-(C_3H_6O)_N-C_3H_6OH$ wherein R is selected from the group consisting of propyl, butyl, pentyl and isobutyl and where $N = 0$ to 4;

(b) immersing the assembly in said first cleaning composition and soaking the assembly in said first cleaning composition for 10 to 20 minutes at 50 to 90°C with intermittent agitation;

(c) removing the assembly from said first cleaning composition;

(d) immersing the assembly in a second cleaning solvent, without adding surfactant, composition which comprises ~~a~~ second water insoluble hydrophobic solvent propylene glycol alkylethers represented by the formula $RO-(C_3H_6O)_N-C_3H_6OH$ wherein R is selected from the group consisting of propyl, butyl, pentyl and isobutyl and where $N = 0$ to 4 and soaking the assembly in said second cleaning ~~composition~~ solvent for 5 to 20 minutes at 50 to 90°C with agitation;

(e) removing the assembly from said second cleaning solvent composition;

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(f) applying a third cleaning composition which comprises a hydrophilic water soluble propylene glycol methyl ether solvent at 50 to 75°C to the assembly for 5 to 10 minutes;

(g) applying a water rinse at approximately room temperature to 65°C to the assembly for approximately 5 to 10 minutes; and

(h) drying the assembly and thereby complete the removal of the flux residue from the assembly surfaces, interfaces and from under the device surfaces.

2. (canceled) The method of claim 1 wherein said first water insoluble hydrophobic solvent and said second water insoluble hydrophobic solvent are propylene glycol alkylethers represented by the formula $\text{RO}-(\text{C}_3\text{H}_6\text{O})_N-\text{C}_3\text{H}_6\text{OH}$ wherein R is selected from the group consisting of propyl, butyl, pentyl and isobutyl and where $N = 0$ to 4.

3. (original) The method of claim 1 wherein said surface active agent is an ionic surfactant.

4. (original) The method of claim 1 wherein said surface active agent is a combination of ionic and non-ionic surfactants.

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5. (original) The method of claim 4 wherein said ionic surfactant comprises approximately 60 to 70 weight % rosin flux and approximately 30 to 40 weight % benzyl alcohol.
6. (canceled) The method of claim 1 wherein said second water insoluble hydrophobic solvent is the same composition as said first water insoluble hydrophobic solvent.
7. (original) The method of claim 1 wherein the agitation of step (d) is an immersion spray.
8. (original) The method of claim 1 wherein said hydrophilic water soluble propylene glycol methyl ether solvent is applied by immersion with pressure spray.
9. (original) The method of claim 3 wherein said ionic surfactant is about 5 to 25 weight % of said first water insoluble hydrophobic solvent.
10. (original) The method of claim 4 wherein said combination of ionic and non-ionic surfactants is about 5 to 25 weight % of said first water insoluble hydrophobic solvent.

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11. (original) The method of claim 4 wherein said non-ionic surfactant is selected from the group consisting of rosin acid ester derivatives, abietyl alcohol, dihydroabietyl alcohol and mixtures thereof, and wherein said ionic surfactant is selected from the group consisting of abietic acid, dihydrabietic acid, tetrahydroabietic acid, dehydroabietic acid, and mixtures thereof.
12. (original) The method of claim 4 wherein said non-ionic surfactant is selected from the group consisting of low foam alkyl polyglycosides, ethoxylated propoxylated aliphatic alcohols, and mixtures thereof.
13. (currently amended) The method of claim 1 wherein said hydrophilic water soluble propylene glycol methyl ether solvent is represented by the formula $\text{CH}_3\text{O}-(\text{C}_3\text{H}_6\text{O})_N-\text{C}_3\text{H}_6\text{OH}$ where $N = 0$ to 4.
14. (original) The method of claim 3 wherein said ionic surfactant is selected from the group consisting of abietic acid, dihydrabietic acid, tetrahydroabietic acid, dehydroabietic acid, and mixtures thereof.
15. (original) The method of claim 1 wherein the drying of step (h) comprises blowing gas on the assembly and then heating the assembly to 80 to 120°C.

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16. (original) The method of claim 15 wherein said gas is N₂.
17. (original) The method of claim 15 wherein said gas is air.
18. (currently amended) The method of claim 1 ~~2~~ where N = 1 to 3.
19. (original) The method of claim 13 where N = 1 to 3.
20. (original) The method of claim 15 wherein said step of heating the assembly to 80 to 120°C is performed under vacuum.
21. (new) The method of claim 1 wherein said electronic assembly comprises a chip circuit joined to a ceramic substrate using Pb/Sn solder with peak reflow temperature of approximately 345 - 365°C.
22. (new) The method of claim 1 wherein said electronic assembly comprises a chip circuit joined to a ceramic substrate using Pb free solder selected from the group

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consisting of Sn/Ag/Cu, Sn/Ag, Sn/Bi and Au/Sn in the presence of high temperature rosin flux.

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